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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,985	06/27/2001	Allen R. Boronkay	VTI017	3804

7590 06/05/2003
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EXAMINER

HE, AMY

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,985

Applicant(s)

BORONKAY ET AL.

Examiner

Amy He

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains informality legal phrases "comprises" and "comprising" on lines 1 and 8. Correction is required. See MPEP § 608.01(b).

Drawings

2. The drawings are objected to. See attached Draftsperson's Patent Drawing Review (PTO948) for details. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,3-4, 27-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Asakura et al. (U. S. Patent No. 5,777,410).

Referring to claim 27-30, Asakura discloses a position sensor (for sensing the rotational position of a shaft, column 14, line 56) comprising:

a resistive element (the pattern board 46 with a resistive portion 302 in Figure 7C) positionable on a first surface, the resistive element comprising a plurality of portions (301, 302 and 303);

a plurality of leads (leads connecting the contact points 311-316 and the terminals of the control unit 320) adapted to provide a voltage to the resistive element; and

a contact element (brushes 61-66, column 14, lines 26-29) positionable on a second surface, the contact element adapted to contact at least a portion of the resistive element to detect a voltage (column 14, lines 52-56) at a contact position, the detected voltage being related to the position or movement of the second surface relative to the first surface; and

a voltage controller (control unit 120, 220 or 320 in Figures 7A-7C) comprising a plurality of electrical switches (see switches 120 and 220 in Figures 7A-7B) adapted to selectively provide a voltage to the portions of the resistive element in relation to the position of the contact element relative to the resistive element, and wherein the voltage controller is adapted to provide substantially no power to at least one portion of the resistive element, and provide power only to the portion being contacted by the contact element (column 14, lines 51-56).

Referring to claims 1 and 31, Asakura discloses a position sensor (in Figure 7C) comprising:

a resistive element (combination of 301, 302 and 303) positionable on a first surface;

a pair of leads (leads connecting 311 and 316) on the resistive element, the pair of leads adapted to supply a first voltage;

an intermediate lead (leads connecting 313) on the resistive element between the pair of leads, the intermediated lead adapted to provide/detect a second voltage;

a contact element (brushes connecting 311-316) positionable on a second surface, the contact element adapted to contact at least a portion of the resistive element to detect/provide a voltage at a contact position; and

wherein the detected voltage is related to the position or movement of the second surface relative to the first surface (column 14, lines 11-56).

Referring to claims 3-4, Asakura discloses an additional lead (leads connecting 312 or 315) and another intermediate lead (leads connecting 314) between the additional lead and one of the leads of the pairs of leads, on the resistive element.

Referring to claim 32, Asakura discloses that the pair of leads are grounded and the contact element provides a voltage from a voltage supply (column 14, lines 46-53).

Referring to claim 33, Asakura discloses a second resistive element (any one of the brushes 61-66, column 14, lines 26-28 can be considered as a resistive element) positionable on the first surface.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 5-6 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takiguchi et al. (U. S. Patent No. 6,347,482).

Referring to claims 1-2 and 5-6, Takiguchi discloses a position sensor (20 in Figure 4A) comprising:

- a resistive element (25a in Figure 5A) positionable on a first surface;
- a pair of leads (GND leads shown in Figure 5A) on the resistive element, the pair of leads adapted to supply a first voltage (0V);

- an intermediate lead (VCC lead in Figure 5A) on the resistive element between the pair of leads, the intermediated lead adapted to provide a second voltage (5V); and

- a contact element (brush 24a or 24b) positionable on a second surface, the contact element adapted to contact at least a portion of the resistive element to detect a voltage (VA or VB in Figure 5A) at a contact position, the detected voltage is provided to a position detector which generates an output signal indicative of the position or movement of the second surface relative to the first surface (abstract).

Referring to claims 13-14, Takiguchi discloses the position sensor as in claim 1 wherein the resistive element (25a in Figure 4A) is at least partially arcuate, and circular.

Referring to claim 15, Takiguchi discloses a first brush and a second brush offset from the first brush (24a and 24b in Figure 4A).

5. Claims 1-2, 7-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Gonring et al. (U. S. Patent No. 6,414,607).

Referring to claims 1-2, Gonring discloses a position sensor (30 in Figure 3) comprising:

- a resistive element (first sensor 32) positionable on a first surface;
- a pair of leads (leads for providing the 5 volts voltage) on the resistive element, the pair of leads adapted to supply a first voltage (5V);
- an intermediate lead (Ground lead) on the resistive element between the pair of leads, the intermediated lead adapted to provide a second voltage (0V); and
- a contact element (brush 41) positionable on a second surface, the contact element adapted to contact at least a portion of the resistive element to detect a voltage at a contact position, the detected voltage is provided to a position detector (controller 60) which generates an output signal indicative of the position or movement of the second surface relative to the first surface (column 3, lines 1-4).

Referring to claims 7-11, Gonring discloses a second resistive element (50 and 54 in Figure 3) comprises a plurality of leads (leads connected to ground, 5 volts line and brushes as shown in Figure 3), positionable on the first surface; a second contact element (42 or 43) positionable on the second surface and capable of contacting the second resistive element, wherein the first and second surfaces are movable relative to one another in a direction, and that at least one lead (ground or the 5 volts lead) from each resistive element is substantially aligned along the direction, and wherein the

leads on the resistive elements are substantially offset from one along the direction (see Figure 3).

Referring to claim 12, the resistive element is substantially linear (see Figure 3).

Referring to claims 16-17, Gonring discloses a position sensor (30 in Figure 3) comprising:

a resistive element (first sensor 32 shown in Figure 3) positionable on a first surface, the resistive element comprising first and second resistive strips (34 and 38 in Figure 3);

a plurality of leads (leads connecting the ground line, 5 volts line and brushes) on each resistive strip to provide a voltage to each resistive strip; and

a contact element (41, 42 or 43) positionable on a second surface, the contact element adapted to contact at least a portion of the resistive element to detect a voltage at a contact position, the detected voltage being related to the position or movement of the second surface relative to the first surface.

Referring to claims 18-19, Gonring discloses the plurality of leads comprises a first lead, connected to ground (ground lead), adapted to provide a first voltage (0 volts) and a second lead (5 volts lead) adapted to provide a second voltage (5 volts) to the resistive strip.

Referring to claims 20-21, Gonring discloses a second resistive element (second sensor 50 and 54) positionable on the first surface, a second contact element (brushes 42 or 43) positionable on the second surface and capable of contacting the second resistive element.

Referring to claim 22, Gonring discloses that the second resistive element comprises first and second resistive strips (50 and 54 in Figure 3).

Referring to claim 23, Gonring discloses a linear resistive element (see Figure 3).

Referring to claims 13-14 and 24-25, Gonring discloses that the resistive element is at least partially arcuate or circular (column 5, lines 45-50).

Referring to claims 15 and 26, Gonring discloses a first brush (42) and a second brush (43) offset from the first brush.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 34-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Fish (U. S. Patent No. 6, 347,482), in view of Gonring et al. (U. S. Patent No. 6,414,607):

Referring to claims 34-36, Fish discloses an interface device (the input and output device, column 4, lines 7-8) for interfacing a user with a computer, the computer running an application program and generating a graphical image (a cursor, column 3, line 50) and a graphical object (a graphical button, column 5, line 1), the interface device comprising:

a user manipulatable object (the user's finger, column 5, line 2; or a cursor, column 3, line 50) in communication with the computer;

an actuator adapted to provide a haptic sensation (column 5, lines 9-10; column 4, lines 13-16, lines 45-49) to the user in relation to an interaction between the graphical image and the graphical object.

Fish, however, does not specifically disclose the sensor as claimed in claim 34.

Gonring discloses a sensor (30 in Figure 3) comprising a resistive element (32 or 50 and 54) on a first surface and a contact element (41) on a second surface, the resistive element comprising a plurality of leads (leads connecting ground) adapted to provide a first voltage and a plurality of leads (leads connecting the 5 volts line) adapted to provide a second voltage (5 volts), whereby the contact element contacts at least a portion of the resistive element to detect a voltage at a contact position, the detected voltage being related to the position/movement of the first surface, relative to the second surface.

Since Fish suggests that any conventional designs of a position sensor could be used (column 13, lines 9-10), It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Fish to use the position sensor, as taught by Gonring, or any other conventional position sensors, to detect the position/movement of the user manipulated object, usable to control a graphical object or a slave device, in order to improve the resolution of position detecting.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (703) 305-3360. The examiner can normally be reached on 8:30am-5pm Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, N. Le can be reached on (703) 308-0750.

The official Fax numbers for the organization are (703-872-9318) Before-Final and (703-872-9319) After-Final Office actions. Any inquiry of a general nature relating to this application should be directed to the receptionist at (703) 305-4900.

ah
AH
May 29, 2003



N. Le
Supervisory Patent Examiner
Technology Center 2800